APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/051,396	01/18/2002	Santosh C. Lolayekar	E003-1005US0	8983

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EXAMINER
GREY, CHRISTOPHER P

ART UNIT	PAPER NUMBER
2616	

DATE MAILED: 11/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>08 September 2006</u>.

2a) ☒ This action is **FINAL**.   2b) ☐ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-35</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) <u>19-23</u> is/are allowed.

6) ☒ Claim(s) <u>1-18 and 24-35</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____ .

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that

form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1.   Claims 1, 2, 7, 9 and 30 are rejected under 35 U.S.C. 102 (b) as being

anticipated by Tzeng (US 6693906)

Claim 1, 30   Tzeng discloses receiving at a first port (fig 1, 20) a packet that specifies a

virtual target (destination address and VLAN information) as a destination (Col 3 lines

45-59 and element 20 in fig 1).

Tzeng discloses sending at a second port (fig 1, 20, several possible destination

ports) the packet to a physical target that is associated with the virtual target (Col 3 lines

33-59 and see fig 1 including all of the shown ports, sending and receiving data), where

the VLAN information and Layer 3 switching is used to route data to a destination.

Tzeng discloses the steps of receiving and sending as described above occurring

without buffering the packet (Col 1 lines 39-Col 2 line 6 and Col 5 lines 35-51 and Col 8

lines 52-67).

Claim 2   Tzeng discloses the steps of receiving and transmitting as disclosed

above occurring at wire speed (Col 8 lines 52-67 and Col 1 lines 39-58).

Claim 9   Tzeng discloses receiving at a first port (fig 1, 20) a packet that specifies a

virtual target as a destination (Col 3 lines 45-59 and element 20 in fig 1, destination

address and VLAN information).

Tzeng discloses sending at a second port (fig 1, 20, several possible destination

ports) the packet to a physical target that is associated with the virtual target (Col 3 lines

33-59 and see fig 1), where the VLAN information and Layer 3 switching is used to

route data to a destination.

Tzeng discloses the steps of receiving and transmitting as disclosed above

occurring at wire speed (Col 8 lines 52-67 and Col 1 lines 39-58).

Claim 7   Tzeng discloses the packet being for a particular request, and wherein at

least one trace tag is associated with the packet and identifies information associated

with the request (Col 5 lines 18-58).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 3, 4, 5, 6, 8, 10-35 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Tzeng (US 6693906) in view of Latif et al. (US 640030), hereinafter

referred to as Latif.

Claim 3, 10, 12   Tzeng discloses the steps of receiving and sending as described

above occurring without buffering the packet (Col 1 lines 39-Col 2 line 6 and Col 5 lines

35-51 and Col 8 lines 52-67).

Tzeng does not specifically disclose the first port being located on a first line card

and wherein the second port is located on a second line card, the first line card

forwarding the packet to the second line card along with information about the virtual

target, and the second line card utilizing the information about the virtual target to

update the packet with an address of a physical target.

Latif discloses the first port being located on a first line card and wherein the

second port is located on a second line card (Col 19 lines 25-52).

Latif discloses the first line card forwarding the packet to the second line card

along with information about the virtual target, and the second line card utilizing the

information about the virtual target to update the packet with an address of a physical

target (see figs 5, 6a, 6c, Col 7 line 47-Col 8 line 61).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the ports as disclosed by Tzeng to be applied with the line cards as

disclosed by Latif. The motivation for this modification is to allow the switch the

intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

Claim 4   Tzeng discloses VLAN information (Col 3 lines 45-59).

Claim 5, 6   Tzeng discloses VLAN information as disclosed in claim 4.

Tzeng does not specifically disclose the virtual target being obtained from a

virtual target descriptor stored in a memory on the first line card.

Latif discloses the target being obtained from a descriptor in a memory in the first

line card (Col 19 lines 14-59 and fig 20). Latif also discloses the line card being used to

send and receive.

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the ports as disclosed by Tzeng to be applied with the line cards as

disclosed by Latif. The motivation for this modification is to allow the switch the

intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

Claim 8   Tzeng discloses VLAN information, where VLAN information is a clear

indication that a number of the ports (fig 1 elements 20) will be used in order to route

packets to the required destination.

Tzeng does not specifically disclose the first port being located in a first line card

and the second port being located on a second line card, the first line card forwarding

the packet to a plurality of line cards, including the second line card, along with

information about the virtual target, wherein each line card in the plurality of line cards

includes a port in communication with a respective physical device associated with the

virtual target, and each of the plurality of line cards utilizing information about the virtual

target to update the packet with an address of the respective physical target.

Latif discloses the first port being located in a first line card and the second port

being located on a second line card, the first line card forwarding the packet to a

plurality of line cards, including the second line card, along with information about the

virtual target, wherein each line card in the plurality of line cards includes a port in

communication with a respective physical device associated with the virtual target, and

each of the plurality of line cards utilizing information about the virtual target to update

the packet with an address of the respective physical target (see figs 5, 6a, 6c, Col 7

line 47-Col 8 line 61).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the ports as disclosed by Tzeng to be applied with the line cards as

disclosed by Latif. The motivation for this modification is to allow the switch the

intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

Claim 11, 13, 16, 25, 33, 35   Tzeng discloses the steps of receiving and

transmitting as disclosed above occurring at wire speed (Col 8 lines 52-67 and Col 1

lines 39-58).

Claim 14   Tzeng discloses receiving a packet at an ingress port (element 20 in fig 1),

the packet being destined for a virtual target with a virtual target address

Tzeng discloses forwarding the packet to a fabric (element 25 in fig 1), which

forwards the packet to an egress port in accordance with address information (see fig 1

and description)

Tzeng discloses sending a packet at an egress port (any of elements 20 in fig 1).

Tzeng discloses sending at a second port the packet to a physical target that is

associated with the virtual target (Col 3 lines 33-59 and see fig 1 including all of the

shown ports), where the VLAN information and Layer 3 switching is used to route data

to a destination.

Tzeng does not specifically disclose each port associated with a line card,
information including a flowID, and placing a virtual target descriptor identifier and the
flow ID in a local header (fig 6a and 6c port ID),

Latif discloses each port associated with a line card (see figs 5, 6a, 6c, Col 7 line
47-Col 8 line 61), information including a flowID, and placing a virtual target descriptor
identifier and the flow ID in a local header (fig 6a and 6c port ID).

It would have been obvious to one of the ordinary skill in the art at the time of the
invention to modify the ports as disclosed by Tzeng to be applied with the line cards as
disclosed by Latif. The motivation for this modification is to allow the switch the
intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

Claim 15   Tzeng discloses the packet being for a particular request, and wherein at
least one trace tag is associated with the packet and identifies information associated
with the request (Col 5 lines 18-58).

Claim 17   Tzeng discloses the steps of receiving and sending as described above
occurring without buffering the packet (Col 1 lines 39-Col 2 line 6 and Col 5 lines 35-51
and Col 8 lines 52-67).

Claim 18   Tzeng does not specifically disclose the virtual target descriptor being
stored in an SRAM on the ingress line card and the virtual target descriptor identifier
being stored in a CAM on the ingress line card.

Latif discloses a direct memory access block within fig 20.

It would have been obvious to one of the ordinary skill in the art at the time of the
invention to modify the ports as disclosed by Tzeng to be applied with the line cards as

disclosed by Latif. The motivation for this modification is to allow the switch the

intelligence to determine the type of traffic and direct it accordingly (Col 19 lines 25-30).

<u>Claim 24, 29, 31, 32, 34</u>   Tzeng discloses a port having an input to receive a packet

(see fig 1 elements 24 and means, 22).

Tzeng discloses a processor unit in communication with the switch ports to

perform virtualization (Col 3 lines 33-67) without buffering (Col 5 lines 35-57).

Tzeng discloses a CPU in communication with the processor unit (Col 3 lines 60-

67).

Latif does not specifically disclose the line card.

Latif discloses a line card for use in the switch (see fig 20 and Col 19 lines 25-

52).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to combine the line card dedicated for receiving and sending IP data as

disclosed by Latif, within the switch dedicated for making switching decisions based on

IP data as disclosed by Tzeng. The motivation for this combination is to determine the

type of traffic and direct it accordingly (Col 19 lines 25-30).

<u>Claim 26</u>   Tzeng discloses each line card including a plurality of ports and a plurality

of processor units, wherein each processor unit is in communication with at least one

respective port (Col 3 lines 33-67 and see fig 1).

<u>Claim 27</u>   Tzeng discloses the processor unit including a packet aggregation and

classification engine and a packet processor unit (Col 3 lines 45-59 and Col 5 lines 35-

52).

The examiner urges the applicant to see fig 20 of Latif.

Claim 28   Tzeng discloses the processor unit including an SRAM and a CAM, both

in communication with the PPU (Col 3 lines 60-67).

Allowable Subject Matter

3.   Claims 19-23 are allowed.

Response to Arguments

4.   Applicant's arguments filed September 8, 2006 have been fully considered but

they are not persuasive. .

(a)   In response to applicant's arguments, the recitation, "in a storage network" and "a

linecard" has not been given patentable weight because the recitation occurs in the

preamble. A preamble is generally not accorded any patentable weight where it merely

recites the purpose of a process or the intended use of a structure, and where the body

of the claim does not depend on the preamble for completeness but, instead, the

process steps or structural limitations are able to stand alone. See *In re Hirao*, 535

F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88

USPQ 478, 481 (CCPA 1951).

(b)   In response to the applicants arguments that the cited art does not disclose a

virtualization, the examiners maintains the rejection according to claim 1, wherein Tzeng

discloses information being received, containing a header with destination and VLAN

information (Col 3 lines 45-59). The header contains VLAN information, which defines a

virtual destination address. Furthermore, Tzeng discloses routing data to an appropriate

port based on a determination (forwarding decision) see Col 3 lines 32-45.

The examiner makes reference to Tzeng Col 1 lines 25-37, which discloses

VLAN information being specified within a frame known as a VLAN tagged frame.

Tzeng also refers to a commonly assigned US Patent No. 5953335, which specifies a

VLAN tagged frame containing a virtual destination address (see co pending application

for inherency of virtualization).

The examiner also makes note that claim 30 discloses a virtualization function,

which interpreted broadly is equivalent to any virtualization function (example, the

receipt of a packet with virtual information).

(c)   In response to the applicants arguments that the cited art does not disclose

virtualization without buffering, the examiner maintains the rejection of claims 1 and 30,

wherein Tzeng discloses virtualization as discussed in (a), and Tzeng discloses the

forwarding decision taking place by a classifier module which does not include buffering

(Col 5 lines 35-51). The applicant relies on the idea that virtualization does not take

place, however the examiners response appears above.

(d)   In response to the applicants arguments that the cited art does not disclose wire

speed, the examiner maintains the rejection of the relevant claims, wherein Tzeng

discloses data flowing through a switch at wire speed and without the need for a large

buffer (Col 8 lines 53-67).

(e)   In response to the applicant's arguments that the cited art does not disclose the

limitations of claims 10 and 12, updating a packet with the address of a physical target,

the examiner maintains that Tzeng discloses a header modifier (element 29 in fig 3) for

modifying a header, where the header contains a destination address and vlan

information. Furthermore, Latif discloses a linecards within the switch for assisting in

forwarding data. It would have been obvious to one of the ordinary skill in the art at the

time of the invention that header modifier disclosed by Tzeng could be applied in the

appropriate linecard as disclosed by Latif for modifying a header (address).

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time

policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

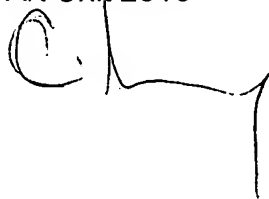extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher P. Grey whose telephone number is (571)272-3160. The examiner can normally be reached on 10AM-7:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chau Nguyen can be reached on (571)272-3126. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Christopher Grey
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Art Unit 2616

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